EXERCISE : 2.1

1. Write the number which is a whole number but not a natural number.
2. Write the next three natural numbers after 20999
3. Write the three whole numbers occurring just before 45001
4. Write the predecessors of (*a*) 9999, (*b*) 16082, (*c*) smallest 4-digit number.
5. Write the successor of (*a*) 100009, (*b*) 98929, (*c*) greatest 3-digit number.
6. Use a number line to find
   (*a*) 3 + 5 (*b*) 2 + 7 (*c*) 7 − 2 (*d*) 9 − 5
7. What is the minimum and maximum number of digits in the sum if we add any two 3-digit numbers?
8. Insert the correct symbol : =, <, > in ☐
   (*a*) 5327 − 3588 ☐ 1,520
   (*b*) 17956 + 2054 ☐ 202000
   (*c*) 15328 − 1320 ☐ 14008
   (*d*) (10308 − 579) − 6114 ☐ 1281
9. Simplify the following by grouping the numbers in a suitable manner :
   (*a*) 7564 + 2122 + 436 (*b*) 144 + 1227 + 356 (*c*) 146 + 87 + 54
   (*d*) 109 + 3082 + 91 (*e*) 1 + 2 + 3 + 4 + 96 + 97 + 98 + 99
10. Replace * by the correct digit in each of the following :

(*a*)
$$\begin{array}{r} 5\ 6\ 8\ 9 \\ -\ *\ 2\ *\ 4 \\ \hline 4\ *\ 3\ * \end{array}$$

(*b*)
$$\begin{array}{r} 5\ 6\ 8\ 9 \\ -\ *\ *\ 7\ 9 \\ \hline 3\ 2\ *\ * \end{array}$$

(*c*)
$$\begin{array}{r} 1\ 0\ 0\ 0\ 0 \\ -\ \ \ *\ *\ 2\ * \\ \hline 4\ 0\ 7\ 8 \end{array}$$

(*d*)
$$\begin{array}{r} 7\ *\ 8\ * \\ -\ 4\ 9\ *\ 6 \\ \hline *\ 3\ 4\ 5 \end{array}$$

11. Perform the following subtraction and check your result by performing corresponding additions :
    (*a*) 68954 − 21856 (*b*) 49000 − 42857
12. Find the difference between the largest 4-digit number and the smallest 5-digit number.
13. There are 79865 people in a village. 26188 are men, 20509 are women and rest are children. Find the number of children.
14. Mr. Sharma withdrew ₹ 90,000 for furnishing a flat. If he bought a sofa set for ₹ 49,050; a refrigerator for ₹ 18,000 and a dining table for ₹ 15,600. How much money is left with him for rest of the furnishing ?

EXERCISE : 2.2

1. Find the products by suitable rearrangements :

   (*a*) $25 \times 37 \times 4$ (*b*) $1102 \times 250 \times 40$ (*c*) $200 \times 846326 \times 5$

   (*d*) $986 \times 125 \times 8$ (*e*) $4 \times 80 \times 125 \times 75$

2. We know that $0 \times 0 = 0$. Is there any other whole number which when multiplied by itself, gives the product equal to the number itself ? What is that number ?

3. If the product of two whole numbers is '0' then what do you conclude from this?

4. There are 5 sections of VI standard and there are 45 students in each section. If the monthly fees is ₹ 110, per student, find the total fee collected per month from the students of VI standard.

5. A teacher purchases 42 Mathematics books and 28 Hindi books for his class. If the cost of a Mathematics book is ₹ 60 and the cost of a Hindi book is ₹ 22, find the total amount paid by the teacher to the shopkeeper.

6. Evaluate the following using suitable properties :

(*a*) $3756 \times 507 - 3756 \times 7$ (*b*) $125 \times 678 - 25 \times 678$

(*c*) $8359 \times 9 + 8359$ (*d*) $272 \times 42 + 272 \times 50 + 272 \times 8$

(*e*) $650 \times 482 - 65 \times 10 \times 382$ (*f*) $4 \times 11 \times 125 + 8 \times 11 \times 125 - 2 \times 11 \times 125$

7. Using Distributive law, find :

(*a*) 535×103 (*b*) 177×97 (*c*) 3568×1002

(*d*) 6842×99 (*e*) 9999×99

In questions 8 to 12, use distributive property to solve wherever it is possible :

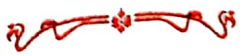
8. A car manufacturing company manufactured 2510 cars per day. How many cars are manufactured in 92 days?

9. A quire of papers contains 144 sheets. If Mohamad Ali purchased 13 quires in January, 15 quires in February and 12 quires in March, find total number of sheets purchased by him in three months.

10. Each employee of a workshop is paid ₹ 5862 per month. Find the total salary paid by the workshop manager per month to 92 workers.

11. In a garden trees are planted in 104 rows. If there are 526 trees in each row, how many trees are there in all in the garden?

12. Find the product of the greatest 4-digit number and the greatest 3-digit number. (Use distributive property to solve).



EXERCISE : 2.3

1. Divide the following and find the quotient and remainder in each case. Also check your answer.
   (*a*) 2178 ÷ 18 (*b*) 1957 ÷ 23 (*c*) 79685 ÷ 300
2. The product of two numbers is 29500. If one of the numbers is 236, find the other.
3. What is the least number that must be added to 5234 to make it exactly divisible by
   (*a*) 8 (*b*) 9
4. What is the least number that must be subtracted from 2349 to make it divisible by
   (*i*) 6 (*ii*) 7
5. What is the largest 3-digit number divisible by 17?
6. What is the least 4-digit number exactly divisible by 41?
7. When the largest 3-digit number is divided by 16, remainder is 7. Find the quotient.
8. Find the number which when divided by 88 gives the quotient 49 and remainder 7.
9. The cost of 1 note-book is ₹ 26. How many notebooks can be bought for ₹ 312?

10. Fill in the blanks :

(*a*) ..... ÷ 2987 = 0

(*b*) 697 ÷ 697 = ...

(*c*) 3805 ÷ ..... = 1

(*d*) 69712 ÷ 0 = ...

(*e*) ..... ÷ 1 = 3873

11. Write 'T' for true statement and 'F' for false statement :

(*a*) '0' is an additive identity in whole numbers.

(*b*) Division is commutative over whole numbers.

(*c*) Multiplication is associative over natural numbers.

(*d*) Division by zero is not possible.

(*e*) Multiplication distributes over addition.

(*f*) Any whole number divided by 1 is the number itself.

(*g*) 1 divided by a whole number gives a whole number.

EXERCISE : 2.4

In each of the following, observe the pattern and fill in the blanks :

1.
$1 + 3 + 5 = 9$
$3 + 5 + 7 = 15$
$5 + 7 + 9 = 21$
$7 + 9 + 11 = \ldots$
$9 + 11 + 13 = \ldots$
$15 + 17 + 19 = \ldots$

2.
$2 + 4 + 6 = 12$
$4 + 6 + 8 = 18$
$6 + 8 + 10 = 24$
$8 + 10 + 12 = \ldots$
$10 + 12 + 14 = \ldots$
$16 + 18 + 20 = \ldots$

3.
$1 + 3 = 4$
$1 + 3 + 5 = 9$
$1 + 3 + 5 + 7 = 16$
$1 + 3 + 5 + 7 + 9 = \ldots$
$1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 = \ldots$

Study the following patterns and fill in the blanks :

4.
$(2 \times 2) - (1 \times 1) = 3$
$(3 \times 3) - (2 \times 2) = 5$
$(4 \times 4) - (3 \times 3) = 7$
$(54 \times 54) - (53 \times 53) = \ldots$
$\ldots - (347 \times 347) = 695$

[Hint : $(54 \times 54) - (53 \times 53) = 54 + 53$]

5.
$37 \times 3 \times 1 = 111$
$37 \times 3 \times 2 = 222$
$37 \times 3 \times 3 = 333$
$37 \times 3 \times \ldots = 666$
$37 \times 3 \times 8 = \ldots$

6. $1 \times 10 + 1 = 11$

$12 \times 10 + 1 = 121$

$123 \times 10 + 1 = 1231$

$12345 \times 10 + 1 =$ .....

..... $\times 10 + 1 = 12345671$

In each of the following, calculate the first two and then fill up the rest by using the pattern obtained from the first two

7. $(9 - 1) \div 8 =$ .....

$(987 - 3) \div 8 =$ .....

$(98765 - 5) \div 8 =$ .....

$(98 - 2) \div 8 =$ .....

$(9876 - 4) \div 8 =$ .....

$(98765432 - 8) \div 8 =$ .....

8. $(11 - 1) \div 10 =$ .....

$(1111 - 1) \div 10 =$ .....

$(1111111 - 1) \div 10 =$ .....

$(111 - 1) \div 10 =$ .....

$(11111 - 1) \div 10 =$ .....

$(1111111111 - 1) \div 10 =$ .....

Sharpen Your Mind

I. Multiple Choice Questions

Choose the correct alternative :

1. Additive inverse of 58 is
   (*a*) 58 (*b*) −58 (*c*) 1 (*d*) 0
2. If $a \times b = 0$, then
   (*a*) $a \neq 0$ (*b*) $b \neq 0$
   (*c*) either $a = 0$ or $b = 0$ (*d*) neither $a = 0$ nor $b = 0$
3. Which of the following will not represent zero?
   (*a*) $3 + 0$ (*b*) 0×0 (*c*) $\frac{0}{5}$ (*d*) $\frac{6-6}{2}$
4. The whole number which does not have a predecessor is
   (*a*) 0 (*b*) 1 (*c*) 2 (*d*) none of these.
5. The predecessor of the smallest 3-digit number is
   (*a*) 99 (*b*) 100 (*c*) 101 (*d*) 999
6. The value of $69 \times 73 + 69 \times 27$ is
   (*a*) 690 (*b*) 6900 (*c*) 69000 (*d*) 142
7. Number of whole numbers between the smallest whole number and the greatest 2-digit number is
   (*a*) 88 (*b*) 98 (*c*) 99 (*d*) 101
8. $85 + 23 = 23 + 85$ is an example of
   (*a*) closure property (*b*) commutative property
   (*c*) associative property (*d*) distributive property.
9. $45600 \div$ _____ $= 4560$
   (*a*) 10 (*b*) 100 (*c*) 1000 (*d*) 1
10. If on dividing 440 by 29, the remainder is 5, then the quotient is
    (*a*) 13 (*b*) 16 (*c*) 14 (*d*) 15

II. Fill in the Blanks :

1. '0' is the smallest _____ number.
2. '1' is the smallest _____ number.
3. The additive identity in whole numbers is _____.
4. The multiplicative identity in whole numbers is _____.
5. _____ is the only whole number which is not a natural number.

III. True or False

1. All natural numbers are whole numbers.
2. The whole number 1 has no predecessor.
3. The successor of a 2-digit number is always a 2-digit number.
4. The predecessor of a 2-digit number is never a single-digit number.
5. 900 is the successor of 899

V. Match the Following :

Column A	Column B
(a) $289 \times 17 = 17 \times 289$	(i) commutativity under addition
(b) $59 \times 106 = 59 \times (100 + 6)$	(ii) Associativity of multiplication
(c) 17×15 = a whole number	(iii) Commutativity under multiplication
(d) $123 + 37 = 37 + 123$	(iv) Closure property
(e) $(89 \times 12) \times 15 = 89 \times (12 \times 15)$	(v) Distributivity of multiplication over addition

Chapter Assessment

M.M. : 30 marks

SECTION A : Short Answer Questions (2 marks)

5 × 2 = 10 marks

1. Find the number of whole numbers between 27 and 83.
2. Find the number of times the digit 3 occurs in one's place in all natural numbers upto 100.
3. Find the proudct of the successor and predecessor of 999.
4. Solve using suitable rearrangement $125 \times 463 \times 80$.
5. Use a number line to find $5 - 3$.

SECTION B : Short Answer Questions (3 marks)

4 × 3 = 12 marks

1. Solve using suitable rearrangement.
   $1062 + 273 + 568 + 297$
2. Multiply 999×99 (use distributive property to solve).
3. Find the missing numbers

$$\begin{array}{r} 8\ \square\ 6\ 9 \\ -\quad 1\ \square\ 7 \\ \hline 2\ 3\ 2\ \square \end{array}$$

4. Divide the smallest 6-digit number by the greatest 4-digit number.

SECTION C : Long Answer Questions (4 marks)

2 × 4 = 8 marks

1. Simplify using distributive property.
   (a) $7 \times 97 \times 21$ (b) 698×102
2. Find the largest 4-digit number divisible by 23?